WHAT IS CLAIMED IS:

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A portable vibration monitor, comprising:

a housing;

a probe;

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s transducer coupled to said probe, wherein said transducer is substantially enclosed within said housing, and wherein said transducer has as an output an analog signal representative of vibrations present in a piece of vibrating machinery contacted by said first portion of said probe;

an analog to digital converter coupled to said output of said transducer, and configured to digitize said analog signal;

a processing circuit configured to receive said digitized analog signal and to produce digital data comprising at least one vibration parameter derived from said digitized analog signal, and

an interface circuit configured to receive said digital data from said processing circuit and to transmit said digital data to a device external to said housing while said processing circuit is producing additional digital data for transmission.

- 2. The monitor of Claim 1, wherein said at least one vibration parameter comprises velocity.
- 3. The monitor of Claim 1, wherein said at least one vibration parameter comprises enveloped acceleration.
- 4. The monitor of Claim by wherein said at least one vibration parameter comprises a value indicative of the degree of bearing wear.

The monitor of Claim 1, wherein said vibration parameter comprises a frequency domain spectrum.

steps of:

A method of monitoring the condition of a machine, comprising the

mechanically coupling a transducer to a measuring point on a machine; processing an output of said transducer to produce data indicative of one or more characteristics of vibrations of said machine; and

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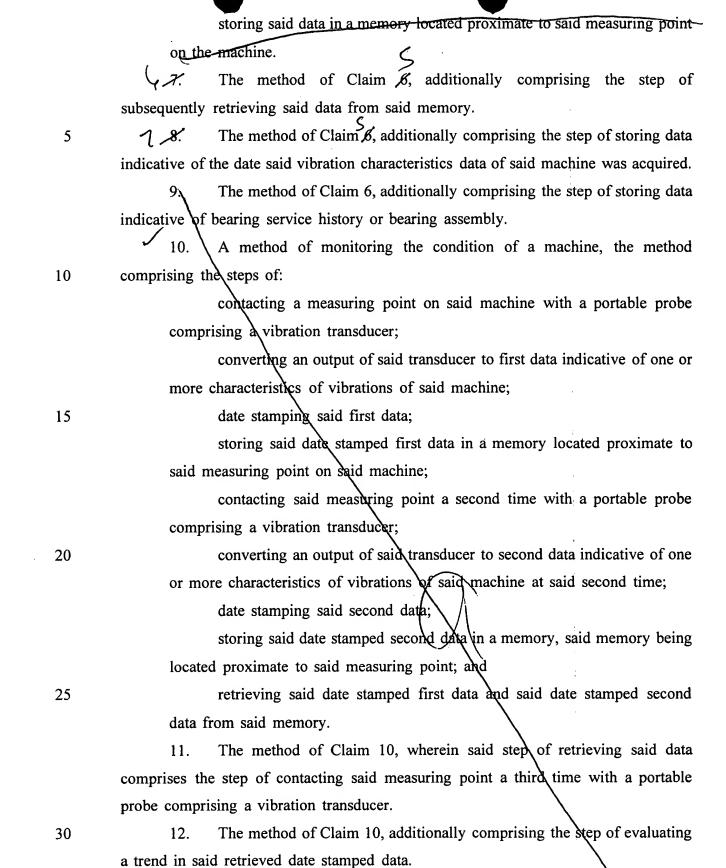
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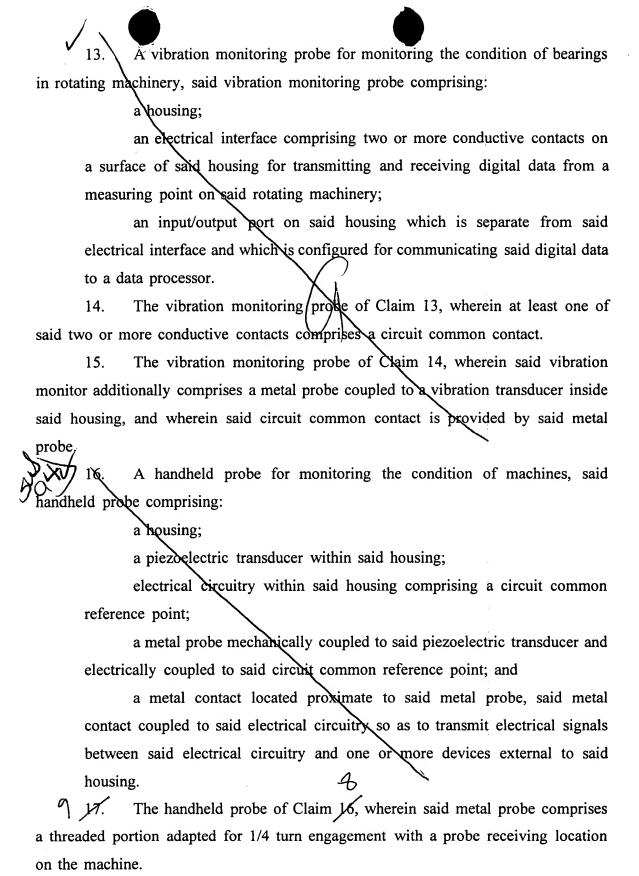
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1 18. The nanuncial probe of Claim 47, wherein said threaded portion
comprises double start threads.
An interface between a vibration measuring point on a machine and a
digital data processor, said interface comprising:
a portable, handheld housing;
a probe having a first portion external to said housing which is
configured to mechanically couple to said vibration measuring point, said probe
additionally comprising a second portion coupled to a vibration transducer;
a circuit in said housing translating an analog electrical signal output
from said transducer into digital data;
communication circuitry within said housing receiving said digital data,
and for transmitting said digital data in approximately real time to the digital
data processor for further processing.
20. The interface of Claim 19, wherein said communication circuitry is
configured to transmit data in RS-232 format.
21. The interface of Claim 19, wherein said communication circuitry is
coupled to a cable, wherein said cable is removably attached to an input/output port
integral to said housing.
22. The interface of Claim 19, wherein said communication circuitry
comprises a wireless transceiver.
23. A method of monitoring the condition of a machine, the method
comprising the steps of:
contacting a measuring point on said machine with a portable probe
comprising a vibration transducer;
converting an output of said transducer to first data indicative of one or
more characteristics of vibrations of said machine; and,
electronically evaluating said data for characteristics associated with a
stable data reading.
24. The method of Claim 23 wherein said step of electronically evaluating
said data comprises the step of determining the rate of change of the value of said
data.